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(54) Title: IMPROVED OPTICALLY EXCITED ATOMIC FREQUENCY STANDARD

(57) Abstract: An optically-excited atomic frequency standard that subjects alkali metal atoms to circularly-polarized optical radiation. The atomic frequency standard is improved by the use of a circular polarizer to control the intensity of the circularly-polarized optical radiation. The circular polarizer includes a linear polarizer and a quarter-wave retarder, with the light to be circularly polarized passing first through the linear polarizer and then through the quarter-wave retarder. In the atomic frequency standard, the optical radiation to which the circular polarizer is applied is itself linearly polarized, and the intensity of the circularly polarized light produced by the circular polarizer is controlled by rotating the circular polarizer. The degree of rotation determines how much of the linearly-polarized optical radiation passes through the linear polarizer, and thus how much circularly-polarized light is produced.

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